

Appl. No. 10/788,787
Amdt. dated Sept. 11, 2006
Reply to Office action dated Jun. 29, 2006

Appl. No. : 10/788,787 Confirmation No. 6157
Applicant : Jan Peter Sternby
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TC/A.U. : 3761
Examiner : Leslie R Deak
Docket No. : GA0267-US03
Customer No. : 24994

Commissioner for Patents
P.O. Box 1450
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AMENDMENT

Sir:

In response to the Office action of June 29, 2006, please amend the above-identified patent application as follows:

Amendments to the Claims are reflected in the listing of claims, which begins on page 2 of this paper.

Remark/Arguments begin on page 8 of this paper.

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (cancelled) A switch valve for use in an extracorporeal blood flow circuit comprising:
 - a valve housing having a chamber,
 - four openings communicating with the chamber; and
 - a valve member located in the valve chamber and movable therein to change the direction of blood flow among the openings, wherein the width of the valve member is smaller than a peripheral dimension of the openings.
2. (cancelled) A switch valve for use in an extracorporeal blood flow circuit comprising:
 - a valve housing having a chamber,
 - four openings communicating with the chamber; and
 - a valve member located in the valve chamber and movable therein to change the direction of blood flow among the openings, wherein the valve member is arranged to adopt an idle position in which all four openings are interconnected.
3. (cancelled) A switch valve for use in an extracorporeal blood flow circuit comprising:
 - a valve housing having a chamber,
 - four openings communicating with the chamber; and
 - a valve member located in the valve chamber and movable therein to change the direction of blood flow among the openings, wherein movement of the valve member does not ever fully block any one of the openings.

4. (currently amended) ~~The switch valve claimed in claim 1 or 3,~~ An extracorporeal circuit claimed in claim 29, wherein the valve member is arranged to adopt an idle position in which all four openings are interconnected.
5. (cancelled) The switch valve claimed in claims 1 or 2, wherein the valve member does not ever fully block an opening.
6. (currently amended) ~~The switch valve claimed in anyone of claims 1 or 2 or 3,~~ An extracorporeal circuit claimed in claim 29, wherein the valve member is pivotable in the chamber.
7. (currently amended) ~~The switch valve claimed in claim 6,~~ An extracorporeal circuit claimed in claim 6, wherein the valve member is pivotable from a normal blood flow position, through an idle position and to a reverse blood flow position.
8. (currently amended) ~~The switch valve claimed in claim 6,~~ An extracorporeal circuit claimed in claim 6, wherein the valve member is pivotable through 90°.
9. (currently amended) ~~The switch valve claimed in anyone of claims 1 or 2 or 3,~~ An extracorporeal circuit claimed in claim 29, wherein the openings are disposed on the valve housing diametrically opposite to each other.
10. (currently amended) ~~The switch valve claimed in claim 9~~ An extracorporeal circuit claimed in claim 9, wherein the valve chamber is cylindrical and the openings are spaced 90° relative to each other around the chamber.
11. (currently amended) ~~The switch valve claimed in anyone of claims 1 or 2 or 3,~~ An extracorporeal circuit claimed in claim 29, wherein the openings are each provided with a respective connector.

12. (currently amended) ~~The switch valve claimed in anyone of claims 1 or 2 or 3,~~ An extracorporeal circuit claimed in claim 29, wherein the valve member forms a partition dividing the valve chamber in two portions.

13. (currently amended) ~~The switch valve claimed in claim 12,~~ An extracorporeal circuit claimed in claim 12, wherein each of said portions is semi-circular.

14. (currently amended) ~~The switch valve claimed in anyone of claims 1 or 2 or 3,~~ An extracorporeal circuit claimed in claim 29, wherein the valve member includes a valve partition that extends into the valve chamber and a wing with which the valve member can be manually moved.

15. (currently amended) ~~The switch valve as claimed in claim 14,~~ An extracorporeal circuit claimed in claim 14, wherein the valve member includes a shoulder, which limits the pivoting movement of the valve member in the chamber.

16. (currently amended) ~~The switch valve as claimed in claim 15,~~ An extracorporeal circuit claimed in claim 15, wherein the shoulder cooperates with a groove on the periphery of the valve chamber.

17. (currently amended) ~~The switch valve as claimed in claim 16,~~ An extracorporeal circuit claimed in claim 16, wherein the groove has recesses defining normal and reverse positions.

18. (currently amended) ~~The switch valve as claimed in claim 17,~~ An extracorporeal circuit claimed in claim 17, wherein the groove also has a recess defining the idle position.

19. (currently amended) ~~The switch valve as claimed in claim 11,~~ An extracorporeal circuit claimed in claim 11, wherein a first and a second of said connectors extend diametrically opposite

from the valve housing and a third and a fourth said connectors are symmetrically inclined by less than 90 degrees with respect to a direction of the first connector.

20. (currently amended) ~~The switch valve as claimed in claim 2 or in claim 3,~~ An extracorporeal circuit claimed in claim 29, wherein the peripheral width of the valve member is smaller than a peripheral dimension of the openings.

21. (cancelled) An extracorporeal circuit comprising:

a dialyzer blood compartment;

a switch valve according to anyone of claims 1 or 2 or claim 3, wherein the valve comprises a connector for each of said openings, said connectors including:

a blood inlet connector,

a blood outlet connector,

a circuit inlet connector, and

a circuit outlet connector, and wherein the circuit outlet connector is connected to an inlet of the dialyzer blood compartment and the circuit inlet connector is connected to an outlet of the dialyzer blood compartment.

22. (currently amended) An extracorporeal circuit according to claim ~~24~~ 29 comprising a line for connecting the circuit outlet connector to ~~the~~ an inlet of ~~the~~ a dialyzer blood compartment, a line for connecting the circuit inlet connector to ~~the~~ an outlet of the dialyzer blood compartment and two further lines for connecting the remaining connectors to venous and arterial needles.

23. (currently amended) An extracorporeal circuit according to claim ~~24~~ 29, wherein a peripheral width of the valve member is smaller than a peripheral dimension of the openings.

24. (cancelled) A blood treatment equipment comprising:

a dialyzer having a blood compartment and a dialysis fluid compartment separated by a semi-permeable membrane,

an arterial needle for connection to a patient's fistula,
a venous needle for connection to a patient's fistula downstream with respect to the arterial needle connection,
a switch valve comprising:
 a valve housing having a chamber,
 four openings communicating with the chamber,
 a valve member located in the valve chamber and movable therein to change the direction of blood flow among the openings, wherein movement of the valve member does not ever fully block anyone of the openings, and
 a connector for each respective opening, said connectors including:
 a blood inlet connector,
 a blood outlet connector,
 a circuit inlet connector connected to an outlet of the dialyzer blood compartment,
 a circuit outlet connector connected to an inlet of the dialyzer blood compartment,
an arterial line connecting the arterial needle to the blood inlet connector,
a venous line connecting the venous needle to the blood outlet connector,
the switch valve being operable between a normal position, wherein fluid is directed from the blood inlet connector to the circuit outlet connector and from the circuit inlet connector to the blood outlet connector, and a reversed position, wherein fluid is directed from the blood outlet connector to the circuit outlet connector and from the circuit inlet connector to the blood inlet connector.

25. (cancelled) A blood treatment equipment according to claim 26, comprising a blood pump operating on a line segment extending between said circuit outlet connector and said inlet of the dialyzer blood compartment.

26. (cancelled) A blood treatment equipment according to claim 26, comprising a blood pump operating on said arterial line.

27. (cancelled) A blood treatment equipment according to claim 26, wherein a peripheral width of the valve member is smaller than a peripheral dimension of the openings.

28. (cancelled) A blood treatment equipment according to claim 26, wherein the valve member is arranged to adopt an idle position in which all four openings are interconnected.

29. (new) An extracorporeal circuit comprising:

a switch valve comprising:

a valve housing having a chamber,

four openings communicating with the chamber; and

a connector for each of said openings, said connectors including:

a blood inlet connector,

a blood outlet connector,

a circuit inlet connector, and

a circuit outlet connector, wherein the circuit outlet connector is for connection to an inlet of a dialyzer blood compartment and the circuit inlet connector for connection to an outlet of the dialyzer blood compartment;

a valve member located in the valve chamber and movable therein to change the direction of blood flow among the openings, wherein movement of the valve member does not ever fully block any one of the openings.

30. (new) An extracorporeal circuit according to claim 29 comprising:

a dialyzer having a blood compartment and a dialysis fluid compartment separated by a semi-permeable membrane, wherein the blood compartment comprises:

an inlet connected to the circuit outlet connector; and

an outlet connected to the circuit inlet connector.

REMARKS/ARGUMENTS

1) Applicants respectfully request that the term of response to the Office action be extended two months pursuant to 37 CFR 1.136 by payment of the required fee (attached by the duplicate copy of a deposit account fee sheet authorization).

2) Election of inventions/ election of species:

The amended set of claims comprises only one independent claim (new claim 29), which renders moot the election requirement.

New independent claim 29 substantially corresponds to the merging of initial claims 3 and 21, with the omission of “a dialyzer blood compartment”. Thus, Applicants are currently pursuing claims directed to an extracorporeal circuit without traverse of the restriction requirement. Applicants reserve the right to file divisional applications.

New dependant claim 30 connects a dialyzer to the extracorporeal circuit of claim 29.

Initial claims 4 and 6 to 20, which are directly or indirectly dependent on claim 29, have been amended so as to be directed to an extracorporeal circuit (and no longer a switch valve).

Initial claims 22, 23 have been amended so as to be properly attached to the new claim 29, which does not recite a “dialyzer blood compartment”.

Claims 1 to 3, 5, 21, and 24 to 28 are cancelled.

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All of the objections/rejections presented in the Office Action of June 29, 2006, have hereby been fully obviated/traversed, and can thus be withdrawn. If there are any questions, or if prosecution can be expedited in any manner by a telephonic conference, the Examiner is urged to call the undersigned at the below-printed telephone number

It is also believed that no other fee than identified in paragraph 1 above are due in connection with the filing of this response, but if any are determined to be required, Applicants hereby provide authorization to charge deposit account number 03-2316 for such fees.

9/12/2006
Dated

Respectfully submitted,



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